



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/713,075

11/15/2000

Eric W. Brown

YOR920000807US1

4728

7590

02/22/2006

Ryan, Mason Lewis, LLP  
1300 Post Road  
Suite 205  
Fairfield, CT 06430

EXAMINER

SPOONER, LAMONT M

ART UNIT

PAPER NUMBER

2654

DATE MAILED: 02/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/713,075

Applicant(s)

BROWN ET AL.

Examiner

Lamont M. Spooner

Art Unit

2654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 November 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

**DETAILED ACTION**

***Response to Amendment***

1. In view of the appeal brief filed on 3/7/05, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

2. Applicant's arguments, see arguments, filed 12/05/05, with respect to the rejections of the claims have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Kupiec (US 5,696,962).

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4, 6-8, are 10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Kupiec (US 5,696,962).

As per **claims 1 and 7**, Kupiec discloses a method for selecting answers to natural language questions from a collection of textual documents comprising the steps of:

extracting scoring features from a candidate list of passages of possible answers (C.31.lines 34-36);

scoring the possible answers using the extracted features and a feature scoring function (C.31.lines 60-63); and

presenting the best scoring possible answer to the user with context from the passage containing the answer (C.32. Table 8).

(The method is implemented on computer apparatus, inherently requiring the modules for performing the above features, see Fig. 1, C.5.lines 53-C.6.line 44).

As per **claims 2 and 8**, Kupiec disclose all of the limitations of claim 1, upon which claim 2 depends. Kupiec further disclose:

the features used to score possible answers consists of one or more of the following features: a semantic type of a current suspected answer (ibid, C.29.lines 25-53), a position of the suspected answer among all suspected answers within all document passages, a position of the suspected answer among all suspected answers within the given passage, a number of suspected answers of a given semantic type retrieved within a given passage, a number of words in a suspected answer that do not appear in the user question, a position of the semantic type in the list of potential

Art Unit: 2654

semantic types for the question, an average distance in words between the beginning of the potential answer and the words in the question that also appear in the passage, a passage relevance as computed by the information retrieval engine, a frequency of a given potential answer on the list, a semantic relation between words from the question and words from the potential answer, and a strength score that is a function of the relevance score

As per **claim 3**, Kupiec disclose all of the limitations of claim 2, upon which claim 3 depends and further discloses:

the feature scoring function is a linear combination of weighted features.(C.31.lines 16-45, 60-63-his degree and number of matches, and sum of scores as linear scoring)

As per **claim 4**, Kupiec and Diamond disclose all of the limitations of claim 3, upon which claim 4 depends. Kupiec further disclose:

the parameters of the scoring function are manually determined (C.19.lines 51-55).

As per **claim 6**, Kupiec discloses all of the limitations of claim 1, upon which claim 6 depends. Kupiec further disclose:

the candidate list of passages of possible answers is obtained from the collection of documents using an information retrieval engine (C.33.lines 25-33, C.34.line 56-C.35.line 5).

As per **claim 10**, Kupiec disclose all of the limitations of claim 7, upon which claim 10 depends. Kupiec further disclose:

the answer selection module selects the answer with the best score obtained from the feature combination module (C.16.lines 35-40).

As per **claim 11**, Kupiec disclose all of the limitations of claim 7, upon which claim 11 depends. Kupiec further disclose:

the answer presentation module shows the top scored answer within the context as specified by a user or a system (C.16.lines 35-45).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5, 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kupiec in view of Braden-Harder (US 5,933,822).

Kupiec and Braden-Harder are analogous art in that they are of the search and retrieval field.

As per **claims 5 and 9**, Kupiec discloses all of the limitations of claim 3, upon which claim 5 depends. Kupiec but lack teaching the parameters of the scoring function are learned by a machine learning algorithm

However, Braden-Harder teaches the parameters of the scoring function are learned by a machine learning algorithm (Fig. 8A and 8B, C.17.lines 16-67, C.18.lines 1-24-the parameters, and weighting scheme is machine algorithm determined, C.25.lines 41-48-his learning mechanism, and weights as the relate to scoring).

Therefore, at the time of the invention, it would have been obvious to modify Kupiec's scoring with a with Braden-Harder's learned scoring. The motivation for doing so would have been to have a "dynamic" and adaptive or varying scoring mechanism (C.25.lines 41-43), for particular attributes.

As per **claim 12**, Kupiec teaches extracting features from questions and corresponding possible answers, applying scoring feature functions to score each possible answer phrase, selecting... and displaying answers phrases, (see claim 1, and C.31-C.33), but lacks explicitly teaching:

determining a feature scoring function during a training phase via a machine learning algorithm applied to a set of training questions, corresponding answers passages, and certain extracted features; and

during an execution phase, extracting certain features from questions and correspond possible answer phrases, applying the feature scoring function determined during the training phase to score each possible answer phrase, selecting one or more of the best scoring answer, and displaying the answer to the user with optional additional context from the answer passages

Braden-Harder further discloses computer program product that performs the steps of:

determining a feature scoring function during a training phase either manually or via a machine learning algorithm (C.26.lines 41-48) applied to a set of training questions, corresponding answers passages, and certain extracted features (C.15.lines

25-63-possible answers-stored for use in subsequent..., C.16.lines 19-47-extracting scoring features, C.16.lines 1-46); and

during an execution phase, extracting certain features from questions and correspond possible answer phrases, applying the feature scoring function determined during the training phase to score each possible answer phrase, selecting one or more of the best scoring answer, and displaying the answer to the user with optional additional context from the answer passages (C.15.lines 25-63-document records/answers-subsequent use, C.22.lines 23-26-the documents, Fig. 8b-Documents 1, 2, and 3-"Recipe containing artichoke hearts and octopus", "article about octopi", "article about deer", respectively- and respective scores are shown in the Fig. 8b. C.16.line 19-46-, C.16.lines 35-40-documents/answers are displayed to the user- inherently requiring the selection thereof-the documents are interpreted as the answer), but lacks explicitly teaching the answers as answer phrases. Therefore, at the time of the invention, it would have been obvious to modify Kupiec with the training feature. The motivation for doing so would have been to simply access necessary pre-computed computational data, instead of having to compute during answer retrieval (C.15.lines 55-60).

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Kupiec (US 5,519,608) teaches extracting from a text corpus answers to questions stated in natural language.



Art Unit: 2654

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lamont M. Spooner whose telephone number is 571/272-7613. The examiner can normally be reached on 8:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on 571/272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

lms  
2/17/06

  
**RICHEMOND DORVIL**  
**SUPERVISORY PATENT EXAMINER**